

BIS - Access Engine (ACE) 4.9.1



- ▶ Distributed access control system with graphical alarm management
- ▶ Seamless integration and interaction with video, fire, intrusion and PA/VA systems via the common BIS platform
- ▶ High resilience thanks to a 4-tier system architecture and redundancy of critical components
- ▶ Integration of third-party products via open and secure protocols and SDK
- ▶ Efficient enrollment process that makes onboarding faster and more secure

Access control has become one of today's most important technologies for increasing the security of people, property, and assets. The BIS Access Engine and sophisticated controller products provide a wide range of access control features.

Combine the basic Access Engine package with optional features to build a customized access control system that meets your needs. Then use the Building Integration System software to integrate the Access Engine with your intrusion and video security equipment.

System overview

The Access Engine (ACE) software, in conjunction with Bosch access hardware, is a complete access control system within the Building Integration System (BIS). It encompasses all the essential features of any standalone access control system, plus a wide range of optional enhancements.

Like the other BIS engines, the ACE takes full advantage of all the extra BIS features, such as interactive location maps and action plans for powerful, fully integrated alarm management. Alarm messages and access control events can be displayed with graphical location information and workflow instructions.

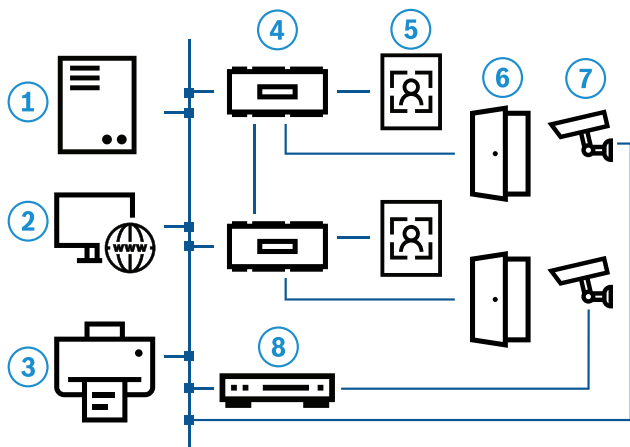
ACE uses the standard BIS user interfaces and their flexibility of customization. Additionally ACE offers specific access configuration interfaces for cardholders, access hardware and access rules.

The main benefit of the Building Integration System family is the integration of a wide variety of security and safety systems on the same premises. By combining ACE with other BIS engines (e.g. Automation and Video) you can design smart security solutions tailored exactly to the requirements of your tender.

The Access Engine runs on a single-workstation, in a client-server system, or within a distributed environment with a central server and local or regional servers.

In the distributed multi-server environment all devices, cardholders and authorizations can be managed from the top-level server.

To ensure highest data security and integrity, BIS ACE can manage high-security RS485 controllers with OSDP v2 protocol for authenticated encrypted communication and reader supervision.



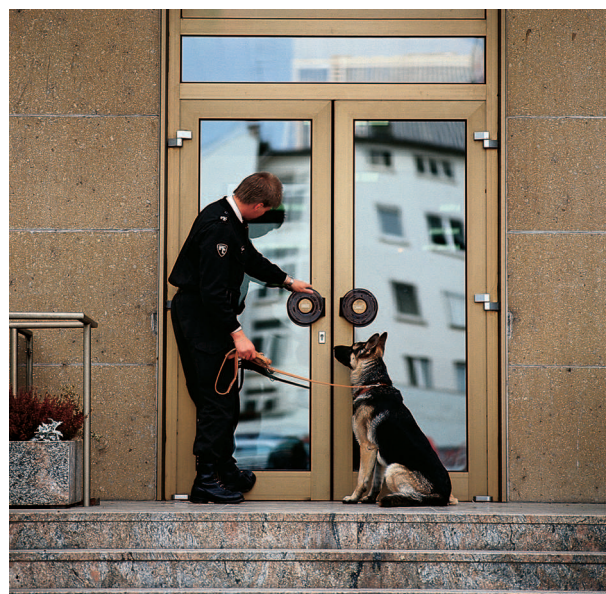
Pos.	Description (single-server system)
1	Central BIS server with Access Engine and Video Engine SW
2	Multiple workstations for alarm management or enrollment
3	Enrollment devices such as card printer, signature scanner, enrollment reader, camera for ID photos
4	Access controllers
5	Access readers
6	Door strikes
7	IP camera
8	Digital Video Recorder e.g. DIVAR for alarm recording

Functions

The Access Engine basic package, in combination with AMC access controllers, offers the following features:

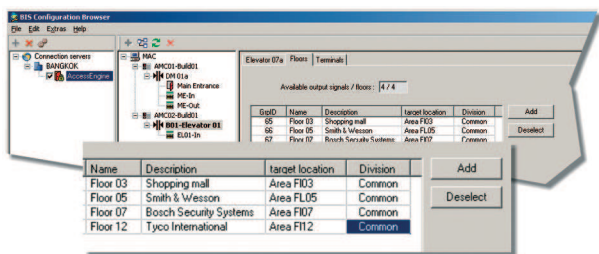
- A wide range of intuitive, template door models allowing fast and easy hardware configuration (e.g. standard door, turnstile, elevator with time & attendance readers etc.).
- Door model configuration dialog generates a wiring plan for the hardware installer.
- Seamless onboarding process including card and biometric enrollment.
- User-definable dialog manager to collect only relevant personal information.
- Time models for time-based access control, including the definition of special days, recurring public holidays, etc.
- Time models for automatic activation/deactivation of cardholder accounts, such as access rules, PIN codes etc.
- Time models for automatic activation/deactivation of system settings, such as setting an office door to stay unlocked from 9 a.m. to 5 p.m.

- Additional PIN code for arming /disarming intruder alarms.
- Temporary blocking / unblocking of cardholders, either manually or time-controlled.
- Blacklisting of cards.
- Anti-passback.
- Access area balancing including access sequence checking provides a means of limiting the number of people in a given area, automatic arming/ disarming if area is empty/not empty and muster list generation.
- N-Persons authorization will grant access at a door only when a defined number (N) of authorized cardholders present their badges to a correspondingly configured reader. The setting can be made reader by reader, and from 2 to N (no limit) persons.
- Mantrap feature for managing two cooperating doors with two pairs of readers; recommended for high security levels, e.g. entrances to server rooms or research departments.
- Guard tour: a state-of-the-art patrol tracking system using existing access control readers, access-sequence and access-time checking. Any violation of patrol sequence or timing causes an alarm, which is then tracked by BIS’s sophisticated alarm management features. Guard tour reports can be generated from the BIS event log.



- Random screening feature: Cardholders accessing or leaving the site can be stopped at random intervals and directed to security personnel for closer inspection. Cards belonging to designated “VIPs” can be excluded from random screening.
- Visitor management: Visitors’ cards can be tracked and handled separately as regards their validity periods and the possible need for an escort.
- Interface for arming/disarming an IDS (Intrusion Detection System) including authorization handling and card assignment.

- Web-based import and export of cardholder data stored in third party systems or on a directory server, such as Microsoft Active Directory or Apache Directory.
- All personal information (including photos and signatures) are stored in a secure SQL data base for better data security.
- Threat-Level Management to preconfigure up to 15 scenarios including Lock Out and Evacuation situations.



- Elevator interface for controlling up to 64 floors via an elevator-internal card reader, and for the assignment of floor authorizations to cardholders.
- Interface to destination management systems able to authorize up to 255 floors with front and back door in an elevator system.
- Interface for importing personnel data from an HR system or exporting such information from ACE to such a system.
- Improved card personalization for importing cardholder images and creating customized corporate badge designs printable on standard card printers.
- Remote door unlock feature e.g. by mouse click on an icon in a BIS interactive location map.
- Creation of logical areas, e.g. single rooms, groups of rooms, whole floors or parking lots, to which special access control points can be assigned.
- Flexible alarm management for a huge range of alarm conditions (e.g. denied access, tamper-detection, badge blacklisted, duress alarm, etc.) optionally combinable with BIS features such as interactive location maps and action plans.
- Utilization of the Bosch controller family's digital, monitored I/Os for additional control and monitoring functions, including intrusion- and tamper-detection.
- Communication between the local access controllers and the readers is secured by OSDP V2 (OSDP Secure Channel).
- Communication between the main access control system and the local access controllers is secured by DTLS (with AES-256 encryption).

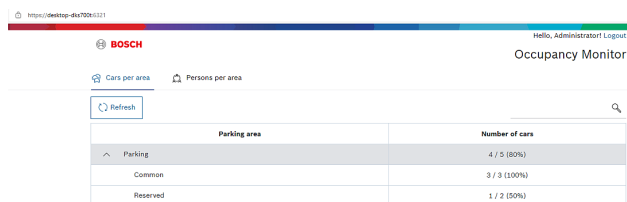


- Easy integration with Bosch or 3rd party video systems such as matrix switches, DVRs, IP-cameras etc.
- Detailed logging of access events and alarms for legal compliance and forensic investigation.
 - Audit trail for changes to master records and authorizations, including creation, modification and deletion of records.
 - Integrated reporting with filtering capability.
- Support for up to eight different card formats simultaneously.
- Mass data change for authorizations and other data.

Video verification

Video verification extends the security level of your access control system through video technology. When a reader is in video verification mode the cardholder is not admitted directly. Instead the reader performs a request for entrance which appears as a message on the operator's screen. An Action Plan (see BIS optional accessories) shows the operator the cardholder's image as stored in the ACE database in conjunction with a live image from a camera near the entrance/reader that sent the request. The operator compares both images and decides whether or not to open the door.

Parking lot management



This feature allows the definition and use of the door model “parking lot” which contains the control of two barriers for entrance and exit and their traffic lights, which prevent access when the lot has reached maximum capacity.

Access to parking lots can be regulated by long-range reader and ID card, or by camera and license plate. Each parking lot can be divided into logical areas, with a maximum number of cars defined for each. Authorization to pass the barrier and park in a logical area can be assigned to cardholders in the standard dialogs. Load-balancing of the parking lots is also possible, with current capacity information displayed on the operator’s screen. Load balancing of cars (parking lots) and persons (access areas) is handled separately, so that it is possible to track the location of both cardholder and car simultaneously.

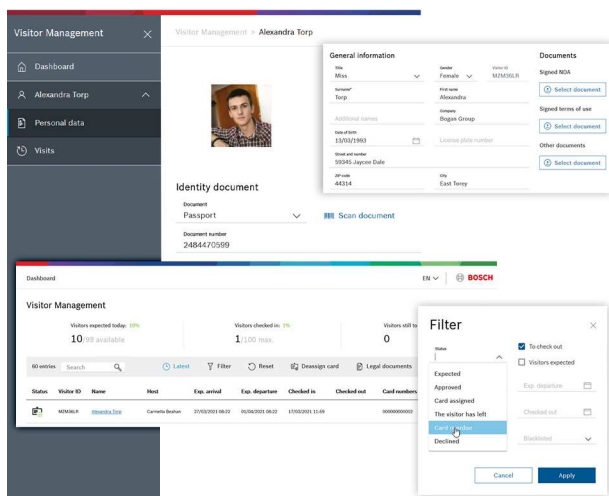
Visitor Management

- Pre-register appointments in the system, to shorten processing time.
- Allow visitors to create their own profiles in kiosk mode, to avoid queues at reception.

- Use a dashboard to monitor the day's expected visits, how many visitors are on the premises, which credentials are in use, and which credentials still need to be collected.
- Set expiration dates on visitor profiles and their attachments to comply with national data privacy regulations, such as European GDPR.

Welcome

Please enter your visitor ID.



Integration of intrusion panels

Permissions to operate Bosch B and G Series intrusion panels can be assigned to cardholders centrally, allowing them to arm and disarm intrusion-controlled areas.

With the appropriate authorization, a cardholder can disarm an area and unlock its door with a single card swipe at a simple reader.

Access control for disease control

- New contactless fingerprint and face-recognition readers eliminate a dangerous source of contamination. For even higher security, the system can optionally demand a contactless card or a further biometric credential for authentication.
- Access sequence control helps enforce one-way crowd flow - reducing the risk of the infection by eliminating face-to-face encounters.
- ACE's threat-level management provides ways to switch instantaneously from one crowd-flow scheme to another, in case of emergency.
- ACE's access-control areas are ideal for quickly implementing hygienic restrictions on the number of persons in a defined space.
- Contactless readers eliminate the need for physical elevator buttons.
- Contactless arming and disarming of intrusion areas further reduces contamination sources.
- The use of mobile phones for access promotes hygiene by reducing the number of shared physical credentials - a cooperative solution developed with partners **HID** and **STiD**.

- License-plate recognition systems reduce the need for manned control booths, keypads and buttons; or for reaching outside the vehicle with physical credentials.

Accessories for BIS Access Engine

Extended parking management

Provides management of guest parking, including the generation of parking vouchers and notification about visitors who overstay their scheduled appointments.

Application Programming Interface

A software development kit (SDK) to integrate Access Engine with third-party applications such as Identity Management, Time & Attendance and advanced Visitor Management systems.

Integration of key cabinets

Integration of **Deister** and **Kemas** key cabinets for securing physical keys and monitoring their usage. Available in certain countries only.

Integration of wireless online locks

Integration of **SimonsVoss SmartIntego** wireless online locks (lock cylinders, door handles and padlocks) for doors, which require medium-level security, such as offices and classrooms. Available in certain countries only.

Integration of remote offline locks

Integration of **Uhlmann&Zacher (OSS-SO)** or **Normbau (Pegasys)** offline locks for remote doors, which connection via cabling is not possible due to distance, construction conditions or cost. Available in certain countries only.

Increasing access control capacity

ACE scales easily to the growing needs of your sites. Additional MAC (Master Access Controller) licenses enable you to increase geographical coverage or performance. A growing number of staff or visitors can be accommodated by additional cardholder licenses. Licenses to increase the number of entrances are available in steps of 32, 128 or 512. An entrance in this sense is equivalent to an ACE door model, making it easy to calculate requirements.

Example: Your site has 2 main entrances with an entry and an exit reader each, 26 office doors with entrance reader and 1 mantrap for the server room. The total number of door models/entrances is 29, irrespective of the number of readers involved. A total of 32 entrances is already covered by the ACE basic package license.

Installation/configuration notes

The Engine can be ordered in one of two ways:

- as an integral part of an initial BIS configuration, in which case it is ordered along with a BIS basic license
- as an enhancement to an existing BIS configuration

Access Engine in figures

The following maxima apply to the reference system described below.

Max. number of active cards per system	400,000
Max. number of readers per server	10,000
Max. number of MACs (Master Access Controllers) per server	40
Max. number of access authorizations per MAC	1,000
Max. number of AMCs per MAC	125 For high-performance systems: 60
Max. number of access authorizations per ACE	40,000
Max. number of divisions per ACE	400
Max. number of guard tours per ACE	200
Max. number of simultaneous guard tours	8
Max. number of B/G intrusion panels for cardholder synchronization with ACE	500

Reference systems for server and client

	Server system (with no client running)	Client system
CPU	Intel Xeon E-2144G @ 3,6 GHz (4 cores, 8 logical)	Intel Core i7-8700 @ 3,2 GHz (6 cores, 12 logical)
RAM	32 GB (2667 MHz)	8 GB (2667 MHz)
GPU	Integrated graphics from CPU	Intel UHD Graphics 630 (4GB GPU memory)
System disk	NVMe Write speed: 1440MB/s Read speed: 2250MB/s Average response time 10ms	SSD disk
Disk where AMS is installed	SSD Write speed: 1000MB/s Read speed: 1100MB/s Average response time 10ms	
Operating system	Microsoft Server 2019 Standard Edition	Microsoft 10 Pro Edition

Browser versions for web-based add-in programs

Web Browser	Version
Google Chrome	90 or higher
Microsoft Edge	90 or higher
Mozilla Firefox	88 or higher

Technical specifications

See the specifications for the respective version of the BIS Basic Package.

Ordering information

BIS-FACE-BPA49 Basic license

License for the BIS Access Engine (ACE) within BIS
Order number **BIS-FACE-BPA49 | F.01U.395.613**

BIS-XACE-100C49 License for 100 ID cards

License for 100 additional BIS ACE cards
Order number **BIS-XACE-100C49 | F.01U.395.614**

BIS-XACE-1KC49 License for 1,000 ID cards

License for 1000 additional BIS ACE cards
Order number **BIS-XACE-1KC49 | F.01U.395.615**

BIS-XACE-10KC49 License for 10,000 ID cards

License for 10,000 additional BIS ACE cards
Order number **BIS-XACE-10KC49 | F.01U.395.616**

BIS-XACE-50KC49 License for 50,000 ID cards

License for 50,000 additional BIS ACE cards
Order number **BIS-XACE-50KC49 | F.01U.395.617**

BIS-XACE-32DR49 License for 32 doors

License for 32 additional BIS ACE doors
Order number **BIS-XACE-32DR49 | F.01U.395.618**

BIS-XACE-128D49 License for 128 doors

License for 128 additional BIS ACE doors
Order number **BIS-XACE-128D49 | F.01U.395.619**

BIS-XACE-512D49 License for 512 doors

License for 512 additional BIS ACE doors
Order number **BIS-XACE-512D49 | F.01U.395.620**

BIS-FACE-OFFL49 License for offline basic package

License for the BIS ACE Offline Doors basic package. Available in certain countries.
Order number **BIS-FACE-OFFL49 | F.01U.395.621**

BIS-XACE-25OF49 License for 25 offline doors

License for 25 additional BIS ACE Offline doors. Available in certain countries.
Order number **BIS-XACE-25OF49 | F.01U.395.622**

BIS-XACE-25ON49 License for 25 remote online doors

License for 25 remote online doors. Available in certain countries.
Order number **BIS-XACE-25ON49 | F.01U.395.623**

BIS-XACE-25OS49 License for 25 OSO offline doors

License for 25 OSO offline doors. Available in certain countries.
Order number **BIS-XACE-25OS49 | F.01U.402.821**

BIS-XACE-1MAC49 License for 1 MAC

License for 1 additional Main Access Controller (MAC) in BIS ACE

Order number **BIS-XACE-1MAC49 | F.01U.395.625**

BIS-XACE-10MC49 License for 10 MAC

License for 10 additional Main Access Controllers (MAC) in BIS ACE

Order number **BIS-XACE-10MC49 | F.01U.395.626**

BIS-FACE-API49 License for API

License for the Application Programming Interface (API) in BIS ACE

Order number **BIS-FACE-API49 | F.01U.395.627**

BIS-FACE-PRK49 License for carpark management

License for Extended Carpark Management in BIS ACE

Order number **BIS-FACE-PRK49 | F.01U.395.628**

BIS-FACE-VISWEB49 License for visitor management

License for Visitor Management in BIS ACE

Order number **BIS-FACE-VISWEB49 | F.01U.395.629**

BIS-XACE-1KEY49 License for 1 key cabinet

License for the connection of 1 key cabinet to BIS ACE. Available in certain countries.

Order number **BIS-XACE-1KEY49 | F.01U.395.624**

Represented by:

Europe, Middle East, Africa:
 Bosch Security Systems B.V.
 P.O. Box 80002
 5600 JB Eindhoven, The Netherlands
 Phone: + 31 40 2577 284
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

Germany:
 Bosch Sicherheitssysteme GmbH
 Robert-Bosch-Ring 5
 85630 Grasbrunn
 Tel.: +49 (0)89 6290 0
 Fax: +49 (0)89 6290 1020
de.securitysystems@bosch.com
www.boschsecurity.com

North America:
 Bosch Security Systems, LLC
 130 Perinton Parkway
 Fairport, New York, 14450, USA
 Phone: +1 800 289 0096
 Fax: +1 585 223 9180
onlinehelp@us.bosch.com
www.boschsecurity.com

Asia-Pacific:
 Robert Bosch (SEA) Pte Ltd, Security Systems
 11 Bishan Street 21
 Singapore 573943
 Phone: +65 6571 2808
 Fax: +65 6571 2699
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com